

DETAILED ACTION

1. This application is responsive to application number (10/584008) filed on April 12, 2007. Claims 1-36 are pending and have been examined.

Information Disclosure Statement

2. Acknowledgement is made of applicant's information disclosure statement.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-36 rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al (US 2002/0067422, hereafter Miura) in view of Schofield et al (US 2002/0167589, hereafter Schofield).

As per **claim 1**, Miura discloses an imaging system comprising:

an image pickup unit configured to pick up an image of a place irradiated with the infrared light and convert the picked-up image into an electric signal (paragraph [0027]);
and

an image processing unit configured to periodically change a signal accumulation time of the image pickup unit and periodically and continuously provide images of different exposure values (paragraph [0030] lines 12-18 and [0033]-[0034]),

the image processing unit extracting a high-brightness block surrounded with a medium-brightness area from a first image of the periodically provided images, and according to a degree of the medium-brightness area, controlling a signal accumulation time of a second image to be picked up (Figure 8; paragraph [0073]).

However, Miura does not explicitly teach an infrared light emitter configured to emit infrared light.

In the same field of endeavor, Schofield teaches an infrared light emitter configured to emit infrared light (Figure 1 elements 14; paragraphs [0066]-[0067]; Schofield teaches an infrared element used to illuminate surrounding environment).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Miura in view of Schofield. The advantage would be adjusting to a preferred brightness at one ambient light condition.

As per **claim 2**, Miura discloses the imaging system of claim 1, wherein: the image processing unit divides the first image into high-brightness blocks, medium-brightness blocks, and low-brightness blocks, and according to the number of medium-

brightness blocks around a group of high-brightness blocks, controls an image signal accumulation time of the second image (Figure 8; paragraph [0073]; Miura teaches the division of the blocks into high, middle, and low luminance (brightness) based on two thresholds).

As per **claim 3**, Miura discloses the imaging system of claim 2, wherein: the image processing unit divides the first image into a plurality of blocks, finds an average brightness value of each of the blocks, and according to the average brightness values of the blocks and two thresholds, classifies the blocks into high-brightness blocks, medium-brightness blocks, and low-brightness blocks (paragraphs [0073] and [0074]; Miura teaches the division of the blocks into high, middle, and low luminance (brightness)).

However, Miura does not explicitly teach finds an average brightness value of each of the blocks.

In the same field of endeavor, Schofield teaches an average brightness value of each of the blocks (paragraph [0060] lines 38-46).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Miura in view of Schofield. The advantage would be adjusting to a preferred brightness at one ambient light condition.

As per **claim 4**, Miura discloses the imaging system of claim 2, wherein: the image processing unit divides the first image into a plurality of blocks, classifies pixels in each of the blocks into high-brightness pixels, medium-brightness pixels, and low-brightness pixels according to two thresholds, finds a maximum one of the numbers of

the high-, medium-, and low-brightness pixels in each of the blocks, determines the brightness level of the pixels of the maximum number as the brightness level of the block, and according to the determined brightness levels of the blocks, classifies the blocks into high-brightness blocks, medium-brightness blocks, and low-brightness blocks (Figure 8; paragraph [0073] and [0074]; Miura teaches the division of the blocks into high, middle, and low luminance (brightness)).

As per **claim 9**, Miura discloses the imaging system of claim 2, wherein: the image processing unit finds the number of medium-brightness blocks surrounding each high-brightness block, finds a maximum one of the numbers of the surrounding medium-brightness blocks, and controls an image signal accumulation time of the second image according to the maximum number (Figure 8; paragraph [0074]; Miura uses a ratio that identifies the maximum number of middle blocks).

Regarding **claim 10**, arguments analogous to those presented for claim 9 are applicable for claim 10.

Regarding **claim 11**, arguments analogous to those presented for claim 9 are applicable for claim 10.

As per **claim 12**, Miura discloses the imaging system of claim 2, wherein: the image processing unit finds the number of high-brightness blocks that form a group, the number of medium-brightness blocks around the group, and a reference number of medium-brightness blocks related to the group, and controls an image signal accumulation time of the second image according to these numbers (Figure 8; paragraph [0073] and [0074]).

Regarding **claim 13**, arguments analogous to those presented for claim 12 are applicable for claim 13.

Regarding **claim 14**, arguments analogous to those presented for claim 12 are applicable for claim 14.

As per **claim 15**, Miura discloses the imaging system of claim 9, wherein: the image processing unit identifies a high-brightness block and searches the periphery of the high-brightness block for medium-brightness blocks and high-brightness blocks, the found high-brightness blocks being grouped with the high-brightness block (Figure 8; paragraphs [0073] and [0074]).

Regarding **claim 16**, arguments analogous to those presented for claim 15 are applicable for claim 16.

Regarding **claim 17**, arguments analogous to those presented for claim 15 are applicable for claim 17.

Regarding **claim 18**, arguments analogous to those presented for claim 15 are applicable for claim 18.

Regarding **claim 19**, arguments analogous to those presented for claim 15 are applicable for claim 19.

Regarding **claim 20**, arguments analogous to those presented for claim 15 are applicable for claim 20.

As per **claim 21**, Miura discloses the imaging system of claim 1.

However, Miura does not explicitly teach wherein: the infrared light emitter, image pickup unit, and image processing unit are installed in a vehicle; the infrared light

emitter emits infrared light toward the outer side of the vehicle; and the image pickup unit picks up an image of the outer side of the vehicle.

In the same field of endeavor, Schofield teaches wherein: the infrared light emitter, image pickup unit, and image processing unit are installed in a vehicle; the infrared light emitter emits infrared light toward the outer side of the vehicle; and the image pickup unit picks up an image of the outer side of the vehicle (paragraphs [0044]-[0045], and [0060] lines 38 – 46).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Miura in view of Schofield. The advantage would be adjusting to a preferred brightness at one ambient light condition.

Regarding **claim 22**, arguments analogous to those presented for claim 21 are applicable for claim 22.

Regarding **claim 23**, arguments analogous to those presented for claim 21 are applicable for claim 23.

Regarding **claim 24**, arguments analogous to those presented for claim 21 are applicable for claim 24.

Regarding **claim 25**, arguments analogous to those presented for claim 21 are applicable for claim 25.

Regarding **claim 26**, arguments analogous to those presented for claim 21 are applicable for claim 26.

Regarding **claim 27**, arguments analogous to those presented for claim 21 are applicable for claim 27.

Regarding **claim 28**, arguments analogous to those presented for claim 21 are applicable for claim 28.

Regarding **claim 29**, arguments analogous to those presented for claim 21 are applicable for claim 29.

Regarding **claim 30**, arguments analogous to those presented for claim 21 are applicable for claim 30.

Regarding **claim 31**, arguments analogous to those presented for claim 21 are applicable for claim 31.

Regarding **claim 32**, arguments analogous to those presented for claim 21 are applicable for claim 32.

Regarding **claim 33**, arguments analogous to those presented for claim 21 are applicable for claim 33.

Regarding **claim 34**, arguments analogous to those presented for claim 21 are applicable for claim 34.

Regarding **claim 35**, arguments analogous to those presented for claim 21 are applicable for claim 35.

Regarding **claim 36**, arguments analogous to those presented for claim 21 are applicable for claim 36.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIKAODILI E. ANYIKIRE whose telephone number is (571)270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272 - 7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2482

/Chikaodili E Anyikire/
Examiner, Art Unit 2482